TWO NEW SPECIES OF MIPSELTYRUS FROM CALIFORNIA

(Coleoptera: Pselaphidae)

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This genus was previously known from one species, *Mipseltyrus nicolayi*, which was described by Dr. Park in 1953.[1] While *M. nicolayi* is known from North Carolina and Tennessee, the author feels that the disjunct distribution produced by the addition of California species is an artifact that will be removed by future collecting.

Mipseltyrus parki Schuster, new species

(Figs. 1, 2, 4, 5)

Male.—Head 0.38 mm. long × 0.26 mm. wide; pronotum 0.39 × 0.33; elytra 0.46 × 0.67; total length 1.51 mm.; width across first visible tergite 0.75 mm.

Rufotestaceous; body slightly punctate, antennae and tibia granulate, head anterior to eyes polished; pubescence decumbent, directed medially on head and pronotum, less so on abdomen, longitudinally on elytra, distally on legs and antennae. Head with vestigial eyes of two or three facets, eyes visible from above; tempora nearly one-half head length, slightly curved; two, deep, nude, vertexal foveae and median frontal fovea at apices of equilateral triangle (vertexal foveae are tentorial, median frontal fovea ends a short distance below surface); frons vertical, forming thin, semi-transparent lamina between antennal acetabula; clypeus short, flat; labrum short, transverse; ventral surface of head flat; gular fovea and posterior lateral angles bearing dense, branched pubescence. Maxillary palpi long, four segmented, proportions as illustrated (Fig. 1). Antennae eleven segmented, three of which form the club; segmental proportions of club as illustrated (Fig. 2). Pronotum widest before middle; three, small, nude, antebasal foveae removed from basal margin by approximately one-fourth pronotal length. Elytra with large, obliquely rounded humeral angles; each elytron with two, pubescent, antebasal foveae; median fovea originating at base of entire sutural stria, lateral fovea free; elytral flank lacking sub-humeral fovea and epiplural sulcus; apical margins fringed with long, dense pubescence. Metawings not present. Abdomen about one-third total length, deflexed; first three visible tergites margined, visible from above; median tergite ratios 3.3/2.2/1.3/1.5/1.0; base of first transversely impressed, impression with dense, branched pubescence; median sternite ratios 7/17/7/5/3/5/1; impression at base of second similar to the dorsal; fifth and sixth sternites punctate; sixth medially emarginate apically; seventh a small penal plate. Prosternum short with branched pubescence

[1] New or little known pselaphid beetles of the United States, with observations on taxonomy and evolution of the family Pselaphidae. Chicago Acad. Sci., Bull., 9(14): p. 249-283, pl. 1-5.

before coxal cavities; mesosternum with large median fovea and two similar impressions with branched pubescence along anterior margins; a nearly nude fovea between, and two pubescent foveae lateral to mesocoxal cavities. Tarsal claws large, subequal; trochanters without sexual modification. Genitalia as illustrated (Figs. 4, 5).

Female.—As in the male with the following exceptions; tenth antennal segment hexagonal, not asymmetrically produced; only six sternites.

The author dedicates this species to Dr. Orlando Park for his kind assistance with this group of beetles.

Holotype male, taken from litter east of BRICEBURG, MARIPOSA COUNTY, CALIFORNIA by the author on March 12, 1955. Additional specimens in the type series were taken by the author at the same locality on the following dates: ♂, II-5-55; 2♂♂, 5♀♀ III-12-55. The holotype and one paratype are deposited in the California Academy of Sciences, two paratypes in the collection of Orlando Park and the remaining specimens in the California Insect Survey.

Mipseltyrus mirus Schuster, new species

(Fig. 3)

Male.—Head 0.39 mm. long × 0.26 mm. wide; pronotum 0.39 × 0.36; elytra 0.49 × 0.77; total length 1.75 mm.; width across first visible tergite 0.86 mm.

Essentially as described for *Mipseltryrus parki* except for the following differences. Head anterior to eyes reticulate, legs entirely granulate; eyes reduced to single facet; tenth antennal segmen hexagonal, not produced at inner apical angle; fifth sternite subglabrous; sixth with subglabrous concavity at median one-third; genitalia differing in shape and proportions as illustrated (Fig. 3).

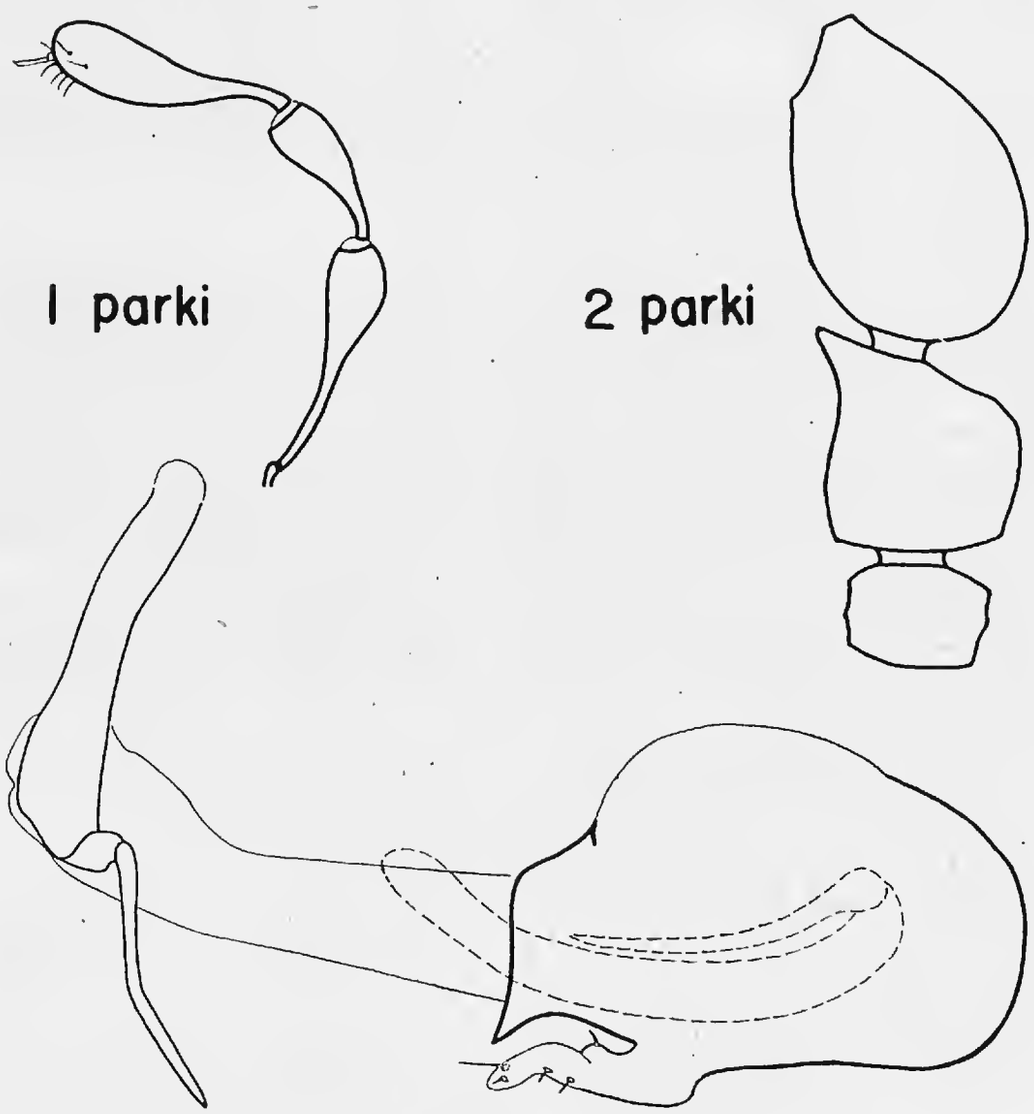
Female.—As in the male but differing in having only six sternites; sixth sternite evenly rounded.

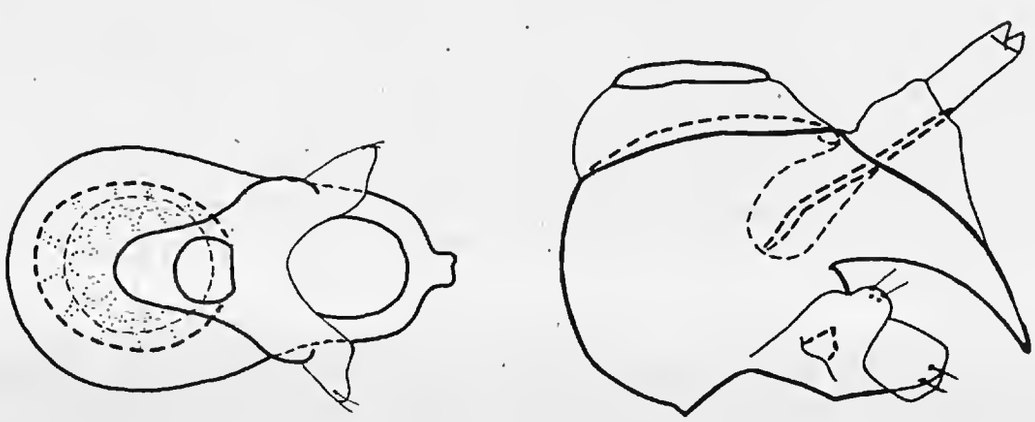
Holotype male, taken from litter, mainly *Pseudotsuga menziesii*, at RIVERTON, ELDORADO COUNTY, CALIFORNIA on May 8, 1954 by B. J. Adelson and R. O. Schuster. Additional specimens in the type series were taken at the same locality on the following dates: 3♂♂, 2♀♀ IV-30-54 R. O. Schuster; 6♂♂, 4♀♀ V-8-54 B. J.

EXPLANATION OF FIGURES

Fig. 1. *Mipseltyrus parki* new species, maxillary palpus of male. Fig. 2. *Mipseltyrus parki* new species, antennal club of male. Fig. 3. *Mipseltyrus mirus* new species, male genitalia, lateral aspect with dotted line indicating position of internal sack not extended, 0.30 mm. long. Fig. 4. *Mipseltyrus parki* new species, male genitalia, ventral aspect. Fig. 5. *Mipseltyrus parki* new species, male genitalia, lateral aspect, 0.28 mm. long.

Adelson, R. O. Schuster; 2♂♂, 2♀♀ IX-8-54 R. O. Schuster. The holotype and two paratypes are deposited in the California Academy of Sciences, four paratypes in the collection of Orlando Park and the remaining paratypes in the California Insect Survey.





Both sexes of *M. mirus* have granulate femora allowing easy discrimination from *M. parki* in which the femora are only slightly punctate. The Californian species differ from *M. nicolayi* in the males lacking armed pro and mesotrochanters.

Book Review

RADIOISOTOPES IN BIOLOGY AND AGRICULTURE. By C. L. Comar, McGraw-Hill Book Co., N.Y. XIII plus 481 pp. 1955. Price $9.00.

There are two groups of investigators who turn to the use of radioisotopes in biological studies. The first group has a knowledge of the basic chemistry and physics of radioactivity and seeks to apply this to a specific problem. The second, and far larger group, has heard of the power and efficiency of this new technique and feels certain that it will solve most of its problems. "Radioisotopes in Biology and Agriculture" has been written with both groups in mind. Even the investigator experienced in this field will find new and intriguing applications. But it is primarily for the novice that Comar has written the book. The first chapter is a survey with pertinent examples of the general ways in which radioisotopes are used with an emphasis on quantitative interpretation. Suggestive examples are chosen from such diverse fields as photosynthesis, insect migration and human physiology. The second chapter deals with the principal difficulties inherent in the use of radioisotopes and shows how they may be avoided or allowed for.

The third chapter deals with the subject of health physics. In these days of conflicting and often overly optimistic or pessimistic views on the hazards of radioactivity it is refreshing to read a sane and well documented account of the problems and their solutions. The reader will learn that careful planning and adequate precautions will make the use of radioisotopes no more dangerous than many commonly accepted laboratory procedures. At the same time, the need for care and thought is adequately emphasized. The potential user of radioisotopes should contact the health branch of his institution and local authorities for special procedures.

Following this general introduction to principles, the next three chapters deal with experimental methods. Enough information is often given to enable one to design his experiment and select the appropriate method. An excellent bibliography will aid in supplying the details. Each radioactive isotope is treated in sufficient detail so that an intelligent selection can be made.

The remainder of the book is devoted to a short but pertinent discussion of autoradiography, paper chomatography, ion exchange and radioactivation analysis and their use in the isolation and analysis of isotope containing substances.

The bare recital of the topics considered in this book cannot do justice to Comar's careful choice of examples and the wealth of important detail he manages to include without burden to the reader. Anyone planning new applications of radioistotopes to biological problems or seeking to interpret published results will be helped by this book.—R. Craig.